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## XXIII.—*On the Distribution of Birds in North Russia.*—I. *On the Distribution of Birds on the Lower Petchora, in North-east Russia.* By J. A. Harvie Brown, F.Z.S.

"Till every well-marked district, every archipelago, and every important island has all its known species of the more important groups of animals catalogued on an uniform plan and with an uniform nomenclature, a thoroughly satisfactory account of the Geographical Distribution of Animals will not be possible."

The following paper is intended as a companion paper to the fuller account published in 'The Ibis' for 1876*, and is intended to show in tabular form the distribution of the species met with.

In the Table further on I have indicated the points at which and the line along which we observed the different species, by perpendicular strokes in the columns devoted to the thirteen localities mentioned. As the preparation of this paper has necessitated a thorough reexamination of my journals, these strokes, marking the records of actual occurrence of the species at these points, may be held as trustworthy, no stroke having been drawn in the spaces unless there is a corresponding record in my journal. When these strokes are drawn *towards the sides* of the columns and not in the centres, they will be understood to indicate that the species were observed *between* the latitudes given, or may be regarded as generally distributed over the distance represented. I have also indicated the probable presence of these species at other localities by dotted lines (...). Where I have left a

* "Notes on the Birds of the Lower Petchora. By Henry Seebohm, F.Z.S., and J. A. Harvie Brown." Ibis, 1876, January, April, July, and October.

blank space, I have considered, either that the evidence I have is too unsatisfactory to enable me to arrive at any conclusion as to their presence or absence, or that the species are indeed absent from these localities *.

In Table II. I have used more elaborate signs to show the abundance or scarcity of the species in each of three districts: thus :—rare, ·|· ; once seen, ✔; twice seen, ✔✔; thrice seen, ✔✔✔; common, ‖; very common, ††; very abundant, ‡‡. This, I believe, will make the tables of more practical use for comparison with other tables of species further east or west than if they only represented the particulars shown in Table I.

If we look at this paper as having reference entirely to the distribution of species in their relation to the parallels of latitude, and entirely apart from meridians of longitude, and apart from the more devious lines of migration, we may of course conclude that though certain species do not pass, or are not found to be present at certain localities, nevertheless, in order to reach the higher latitudes at which we are able to record them, they must have passed through or been present at other localities upon these same parallels of latitude, to the east or west of our points of observation.

I have purposely avoided the question of longitudinal distribution at present, as our data for determining that, or even approaching to a determination, are too scanty. There remains an immense tract of ornithologically unexplored country in Northern Russia:—*first*, the Kola peninsula and west of the White Sea up to the Finnish frontier in the west, a land composed of vast tundra and forest and river; *secondly*, between Mezén † and Archangel in the west, and

* Negative evidence in matters of this kind is seldom very satisfactory; and I prefer to leave the question of their actual absence to be proved by future observations, to hazarding guesses as to their *probable* absence. Those who peruse the paper may draw deductions for themselves in this matter. I have even included such species as *Squatarola helvetica* in this class; but see a paper by me on migration (Proc. Glasg. Nat.-Hist. Soc. vol. iii. pt. 1, p. 44, 1875–76), and also Seebohm on the same subject in Rowley's Orn. Misc. (vol. i. pt. iv. p. 239).

† The neighbourhood of Mezén has been tolerably well explored. As early as 1841 Herr Bystrov collected at Mezén (see Brandt, "List of Skins of Mammals and Birds (62 species) sent by Herr Bystrov of Mezén to Zool. Mus. of the Academy," Bull. Sc. de l'Académie de St.-Pétersbourg, vol. x. 1842, p. 350); and of late years Mons. Ignati N. Piottuch has from time to time forwarded considerable numbers of specimens from that locality and from Archangel. Graf Hoffmannsegg and his assistant Herr Hencke also collected for some years in these districts; but little remains on record of their discoveries either there or on the Petchora, which they also visited about twenty years ago. There is a short notice by Hencke (Allgemeine deutsche naturh. Zeitung, 1856, p. 236, Dresden), and another immediately following by Hoffmannsegg, which, as far as I

the Petchora (say, between the meridians of 40° and 52° E. long); and *thirdly*, between the Petchora and the Ural Mountains, or to 70° E. long., in which latter is included the Bolshaya Zemlia of the Russians, or Arkya Ya of the Samoyedes. Until this vast area is partially or wholly explored by naturalists, we cannot hope to arrive at very satisfactory results, or even to form a satisfactory basis to work upon; there remains too large a country unexplored, and there are in consequence too few points at which observations have been made. That it is an interesting country I believe there can be little doubt; and this is indicated by the absence of certain species at Archangel which are present at Ust Zylma and *vice versâ*. The fauna of the Lower Petchora valley does not appear to retain such a purely western Palæarctic or European character as that of the Archangel district does. Thus *Budytes citreolus*, which literally swarms upon the banks of the Petchora and its islands north of the Arctic circle, is unknown at Archangel; and many other cases in point readily suggest themselves on perusal and comparison of the various papers on North-Russian ornithology. The question of interest is, Are the boundaries of the western and eastern Palæarctic subregions, as at present laid down, all-sufficient for zoological purposes? Is it possible to fix these boundaries with any thing like precision if so vast an area as that between the White Sea and the present presumed boundary remains (with the exception of one narrow strip) unexplored? I think the answer must be, "No" *.

Without, then, at this time, discussing further the question of eastern and western distribution, I return to the object of this paper, viz. the distribution of birds between Ust Zylma on the first great bend of the river Petchora, above its confluence with the sea, and the Golaievskai Islands, which form a fringing belt of sandbanks across the entrance of the Petchora Gulf, or Suchaye More (Shallow Sea) of the Russians, and which are about 300 miles to the northward of the former locality.

Before presenting a table of the species met with, I will

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can learn, are all the records left by them, except a manuscript list of birds by the latter gentleman, mentioned by Mr. Wolley ('Ibis' 1859, p. 75), but which, as yet, I have failed to trace. Seebohm and I were told also by those who remembered them or travelled with them to the Petchora, that they kept no notes, but simply collected skins and eggs (see also 'Ibis,' 1876, p. 105). References up to date of other papers on North-Russian ornithology will be given in later parts of this paper.

* For the latest and fullest account of the Palæarctic region and its subregions see Wallace's 'Geographical Distribution of Animals,' vol. i. chap. x. p. 180; and for the presently accepted boundaries of the 'Siberian' and 'European' subregions, see p. 191.

first shortly describe the different kinds of country at the thirteen localities through which our line takes us, and indicate the time spent by us at each.

1. *Ust Zylma* (65° 26′ N. lat.), our starting-point, is situated on the east bank, on the elbow of land formed by the noble semicircular sweep of the river as it changes its course from westerly to almost due north. Behind the town, rising ground, cultivated hill-slopes, backed with pine-forest. On the west bank miles of meadows and willow-thickets, intersected by *kurias* or creeks and backwaters, through which the river Zylma flows from the westward. Beyond this pine-forests again appear, and, further off still, the dim low range of the Timan Mountains. We stayed here until the ice broke up and floated away (15th April to 10th June), and then proceeded down the river, stopping here and there to collect and cook our food.

2. *Habariki* (65° 47′ N. lat.).—About 26 miles lower down the river, and also situated on the east or right bank *.

Round the village are a few acres of cultivated land, not large enough, however, to tempt the large flocks of Lapland buntings to alight. Round this, old forest of pine and larch with undergrowth, and large marshes and woodland lakes caused by the overflow of the river in spring, when the ice breaks up (Ibis, 1876, p. 448).

We visited this locality for two days in winter, and again for three days in June, and also stayed for twenty-four hours when on our way down the river—April 29th to 30th; June 3rd, 4th, 5th, and 10th to 11th.

3. *Yorsa River* (66° 13′ N. lat.).—33 miles or so lower down the river, on the west or left bank. Here there was a continuation of the low swampy meadows, marshy hollows, and *kurias*, with willow, alder, and birch. On the east bank the pine-forest, we were told, comes north as far as a place called Bougáefskaya, between Habariki and the Arctic circle. The islands below Habariki are for the most part willow-, alder-, and birch-covered, like many parts of the banks.

We stayed here June 13th from 5 P.M. till June 14th at 2 P.M., long enough to give us some idea of the local fauna.

4. *Chuvinski* (66° 33′ N. lat.).—About 12 versts further down the river, situated on an island close to the east bank and almost upon the arctic circle. Here there were a few houses and a patch of cultivation, surrounded by birch-woods and willow-swamps.

We stayed here a few hours on June 14th.

* Habariki is really an island, but, being only separated from the fast land by a narrow branch of the river, for all practical purposes it may be reckoned as standing on the east shore of the river.

5. *Abrámoff* (66° 42′ N. lat.).—About 20 miles further down the river. Situated on the west bank. Here willow-swamps and birch-woods lately under the overflow of the river; a little to the southward the land rises at one place, and a few stunted pines are to be seen. The village is small and unimportant.

Stayed here a few hours on June 15th.

6. *Viski* (67° 15′ N. lat.).—37 miles lower down the river, and situated on the west bank close to the head of the delta—a considerable village, with some extent of pasturage for cattle. Surrounded by willow-thickets and birch of small growth. Some of the peasants are very wealthy; and the houses are good. Here also there is a good shop, where many necessaries can be purchased and some few luxuries.

We stayed here and in the neighbourhood from June 16th to 17th.

7. *Gorodok*, or *Pustozersk* (67° 31′ N. lat.).—About 27 miles lower down the river. "The town" (Gorodok) is situated on a circular bay, which is surrounded by a sandy waste and tundra covered with stunted birch and juniper, having in the hollows marshy-edged pools and willow-thickets. We did not go to the town, but encamped near the entrance of the circular bay and collected all night upon the sand-dunes and tundra.

Stayed here from evening of June 17th to June 18th at 4 A.M.

8. *Kuya* (67° 45′ N. lat.).—25 miles further down the river, on the east bank. Here there was sandy tundra, with dense growth of dwarfed willow, and a good deal of open pasturage for cows and a few sheep, and pools of water in the sandy ground. An island opposite was covered with willow-swamp, intersected by kurias and here and there open patches of long rank herbage.

Stayed here June 18th to 8 A.M. on the 19th.

9. *Alexievka Island* (N. lat. ?).—About 16 miles from Kuya. Situated about 1½ verst (1 mile) or less from the east bank. Willow-swamp and a few birches. About 40 versts of this kind of growth extend westward from Alexievka, covering the whole delta. On the east bank lies the true tundra, balmy with the scent of the aromatic dwarf rhododendron (*Ledum palustre*), brilliant with the flowers of the delicious "maroshka" (*Rubus chamæmorus*), luxuriant in its covering of minute arctic plants, mosses, sphagnums, and lichens, and glancing with innumerable lakes and pools of pure cold water.

Alexievka was our headquarters from June 20th to the end of our stay, August 2nd.

10. *Yooshina River* (N. lat. ?).—About halfway between

Alexievka and Stanovaya-Lachta (no. 11), or rather nearer the latter. Situated on the east bank. Here there is undulating prairie-like tundra with lakes and luxuriant growth in the hollows, of arctic brambles, willow-scrub, dwarf birch, grasses, carices, sorrel, *Veratrum album*, and wild geranium (*vide* Ibis, 1876, p. 447).

We stayed here a few hours on June 25th.

11. *Stanovaya-Lachta* (N. lat. ?).—26 miles lower down the river than Alexievka, not far from the promontory of Boluanskai Noss. This was the old lading-station of the Petchora Timber-trading Company. On the east bank. A few deserted huts, which we made habitable during our short visit. Around, level or undulating tundra, lakes, high banks to the river, and hills of some elevation on either side of the bay and further inland (*vide* Ibis, 1876, p. 447).

Stayed here from June 26th to evening of June 28th, and visited it also on July 6th and 30th.

12. *Dvoinik* (68° 28′ N. lat. and about 55° 55′? E. long.).—30 miles from Stanovaya-Lachta along the north-east coast of the fast land. On the coast of the Petchora Gulf north-east of the Boluanskai Bucht. Here, great extent of level tundra, salt-marshes and brackish inlets; drift-timber; wrecks of ships; sand-dunes and sand-hills, covered with Esparto grass; and rivers. In the distance, 25 versts off, the Pytkoff (five peaks) Mountains (*v.* Ibis, 1876, p. 297).

Stayed here from July 22nd to 30th in the hold of a wrecked sloop, which we made very habitable.

13. *Golaievskaï Banks* (68° 58′ N. lat.).—About 54 miles north of Dvoinik, at the entrance of the Petchora Gulf. Here bare, almost level sandbanks, a foot or two above high-water-mark, and of considerable extent. Some said to be grass-covered and of slightly higher elevation (*v.* Ibis, 1876, p. 295).

We stayed here, on the islands nos. 3, 4 (so marked in Admiralty chart), for a few hours on July 13th–14th.

These thirteen localities are the places at which we did most of our collecting, and where all the species mentioned in the following table were procured.

I offer this paper not only as a slight contribution towards our knowledge of zoological geography, but also with the idea that if field-naturalists would keep somewhat similar records in other localities, workers at home might be materially assisted in their labours and studies of larger areas.

I have taken the hint from Mr. Wallace's grand work 'The Geographical Distribution of Animals.' In descending from the treatment of orders and families and genera in regions, to species in limited areas or districts, I have found it necessary to employ a few additional symbols, which I trust will be found easily intelligible and sufficiently to the point.

*Tables showing Distribution of Birds in North-east Russia between Ust Zylma* (65° 26′ N.) *and the Golaievskai Banks* (68° 58′ N. lat.).

*Explanation of the Symbols used in the following Tables.*—Absent, a blank space. Probable presence, ... Present, |. Rare, ·|·. Common, ||. Very common, ††. Exceedingly abundant, ‡‡. Once, twice, or thrice occurred, recorded, without doubt identified, or shot, ✓, ✓✓, ✓✓✓. Occasional, *. Doubtful records: a query in the columns.

TABLE I., showing the fauna at 13 localities.

| Species. | Time spent at each locality. | April 15 to June 10. | April 29–30, June 3, 4, 5, June 10, 11. | June 13–14, 5 P.M. to 2 A.M. | June 14. | June 15. | June 16–17. | June 17–18, 8 P.M. to 4 A.M. | June 18–19, 12 noon to 8 A.M. | June 20 to Aug. 2. | (June 25.) | (June 26–28.) | (July 22–30.) | (July 13–14.) | Total | TABLE II., showing the fauna in 3 districts. | | | 'Ibis,' 1876. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English miles. | → | 26 | 33 | 12 | 20 | 37 | 27 | 25 | 16 | → | 26 | 30 | 54 | 306 | | | | |
| | Localities and Approximate Positions. | Ust Zylma, 65° 26′ N. | Habariki, 65° 47′ N. | Yorsa River, 66° 13′ N. | Chuvinski, 66° 33′ N. | Abrámoff, 66° 42′ N. | Viski, 67° 15′ N. | Gorodok, 67° 31′ N. | Kuya, 67° 45′ N. | Alexievka, ? | Yooshina, ? | Stanovaya-Lachta, ? | Dvoinik, 68° 28′ N. | Golaievskai, 68° 58′ N. | | Ust Zylma to Chuvinski, 65° 26′–66° 30′. | Chuvinski to Alexievka, 66° 30′ to 68° ? | Alexievka to Golaievskai, 68° to 68° 58′. | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | 1 | 2 | 3 | page |
| 1. Aquila chrysaëtus (*L.*) | | ... | — | | | | | | | | | | | | | ✓ | | | 110 |
| 2. Haliaëtus albicilla (*L.*) | | \| | — | | | | | | | | | | | | = | \|\| | ✓ | ,, |
| 3. Pandion haliaëtus (*L.*) | | ... | — | | | \| | ... | ... | ... | \| | ... | ... | \| | | ✓ | | | ,, |
| 4. Buteo lagopus, *Brünn.* | | ... | ... \| | \| ... | | | | | | | | | | | ✓✓ | | | ,, |
| 5. Falco peregrinus (*L.*) | | \| | ... | ... | ... | ... | ... | ... | ... | ... | ... | \| | | | | ✓✓✓ | | | ,, |
| 6. —— subbuteo (*L.*) | | ... | \| | | | | | | | | | | | | | ✓✓✓✓ | ... | \|\| | ,, |
| 7. —— æsalon[1] (*L.*) | | \| | | | | | | | | | | | | | ‡‡ | | | | 111 |
| | | | | | | | | | | | | | | | | | | | ,, |

[1] Although Merlins were not again seen to the northward, there can be little doubt that they migrated abou the same time that the Snow-Buntings left Ust Zylma. How far north they go cannot be shown from our observations.

TABLE I., showing the fauna at 13 localities (*continued*).

| Species. | Localities and Approximate Positions. | 1 Ust Zylma, 65° 26′ N. | 2 Habarïki, 65° 47′ N. | 3 Yorsa River, 66° 13′ N. | 4 Chuninski, 66° 33′ N. | 5 Abramoff, 66° 42′ N. | 6 Viski, 67° 15′ N. | 7 Gorodok, 67° 31′ N. | 8 Kuya, 67° 45′ N. | 9 Alexieyka, ? | 10 Yooshina, ? | 11 Stanovaya-Tachta, ? | 12 Dvorinik, 68° 28′ N. | 13 Golaievskai, 68° 58′ N. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | English miles. | ▲ | 26 | 33 | 12 | 20 | 37 | 27 | 25 | 16 | ▲ | 26 | 30 | 54 | 306 |
| | Time spent at each locality. | April 15 to June 10. | April 29-30. June 3, 4, 5. June 10, 11. | June 13-14, 5 P.M. to 2 A.M. | June 14. | June 15. | June 16-17. | June 17-18, 8 P.M. to 4 A.M. | June 18-19, 12 noon to 8 A.M. | June 20 to Aug. 2. | (June 25.) | (June 26-28.) | (July 22-30.) | (July 13-14.) | |
| 8. Astur palumbarius (*L.*) .... | | ... | ... | — | | | | | | | | | | | |
| 9. Accipiter nisus (*L.*) ..... | | — | | | | | | | | | | | | | |
| 10. Circus cyaneus (*L.*) ..... | | — | — | — | ... | ... | ... | ... | ... | — | ... | — | | | |
| 11. Surnia nyctea (*L.*) ..... | | — | — | ... | ... | ... | ... | ... | ... | | | | | | |
| 12. Asio accipitrinus, *Pall.*..... | | — | — | — | ... | — | | | | | | | | | |
| 13. Bubo ignavus, *Forst.*..... | | — | | | | | | | | | | | | | |
| 14. Dryocopus martius (*L.*) .... | | — | | | | | | | | | | | | | |
| 15. Picus minor, *L.* ..... | | — | — | ... | ... | — | — | | | | | | | | |
| 16. —— tridactylus, *L.* ..... | | — | — | ... | — | — | | | | | | | | | |
| 17. Cuculus canorus, *L.* ..... | | — | — | — | ... | | | | | | | | | | |
| 18. Corvus corax, *L.* ..... | | — | ... | ... | ... | — | ... | ... | ... | — | | | | | |
| 19. —— cornix, *L.* ..... | | — | — | ... | ... | — | ... | — | — | — | | | | | |
| 20. —— frugilegus, *L.* ..... | | — | | | | | | | | | | | | | |
| 21. —— monedula, *L.* ..... | | — | | | | | | | | | | | | | |

TABLE II., showing the fauna in 3 districts (*continued*).

| | 1 Ust Zylma to Chuvinski, 65° 26′–66° 30′. | 2 Chuvinski to Alexieyka, 66° 30′ to 68° ? | 3 Alexieyka to Golaievskai, 68° to 68° 58′. | 'Ibis,' 1876. |
|---|---|---|---|---|
| 8. Astur palumbarius (*L.*) .... | ▲ | | | page 111 |
| 9. Accipiter nisus (*L.*) ..... | ▲ | | | ,, |
| 10. Circus cyaneus (*L.*) ..... | = | ▲ | ▲ | ,, |
| 11. Surnia nyctea (*L.*) ..... | = | — | ▲ | ,, 112 |
| 12. Asio accipitrinus, *Pall.*..... | = | | | ,, |
| 13. Bubo ignavus, *Forst.*..... | ⋕ | | | ,, |
| 14. Dryocopus martius (*L.*) .... | ÷ | | | ,, |
| 15. Picus minor, *L.* ..... | = | = | | ,, |
| 16. —— tridactylus, *L.* ..... | = | — | | ,, |
| 17. Cuculus canorus, *L.* ..... | = | | | ,, |
| 18. Corvus corax, *L.* ..... | = | — | — | ,, 113 |
| 19. —— cornix, *L.* ..... | †† | †† | | ,, |
| 20. —— frugilegus, *L.* ..... | ▲ | | | ,, |
| 21. —— monedula, *L.* ..... | ⋕ | | | ,, |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22. Pica rustica (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 23. Perisoreus infaustus (*L.*) .... | | | | | | | | | | | | | | | | | „ |
| 24. Passer domesticus (*L.*)..... | | | | | | | | | | | | | | | | | 114 |
| 25. —— montanus (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 26. Pyrrhula major, *Brehm* .... | | | | | | | | | | | | | | | | | 115 |
| 27. Carpodacus erythrinus (*Pall.*). | | | | | | | | | | | | | | | | | „ |
| 28. Corythus enucleator (*L.*) .... | | | | | | | | | | | | | | | | | „ |
| 29. Fringilla montifringilla (*L.*).. | | | | | | | | | | | | | | | | | 116 |
| 30. Linota linaria (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 31. —— exilipes, *Coues*[1] ..... | | | | | | | | | | | | | | | | | „ |
| 32. Emberiza citrinella, *L.*..... | | | | | | | | | | | | | | | | | „ |
| 33. —— pusilla, *Pall.*..... | | | | | | | | | | | | | | | | | „ |
| 34. —— schœniclus, *L.* ..... | | | | | | | | | | | | | | | | | 117 |
| 35. Plectrophanes lapponicus (*L.*) | | | | | | | | | | | | | | | | | „ |
| 36. —— nivalis (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 37. Alauda arvensis, *L.* ..... | | | | | | | | | | | | | | | | | 119 |
| 38. Otocoris alpestris (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 39. Anthus Gustavi (*Swinhoe*)[2] .. | | | | | | | | | | | | | | | | | 120 |
| 40. —— trivialis (*L.*) ..... | | | | | | | | | | | | | | | | | 121 |
| 41. —— pratensis (*L.*) ..... | | | | | | | | | | | | | | | | | „ |
| 42. —— cervinus, *Pall.* ..... | | | | | | | | | | | | | | | | | 122 |
| 43. Budytes viridis (*Gmel.*) .... | | | | | | | | | | | | | | | | | „ |

[1] In connexion with this puzzling group I may here mention that Mr. Dresser and Prof. Newton have at last succeeded in disentangling the synonymy and separating the species. Mr. Dresser writes to me on this matter that the bird we obtained in North Russia, very white in winter, with almost unspotted rump, usually larger in size than *L. linaria*, but varying a good deal, is *Linota exilipes* of Coues, and is a small form of *L. Hornemanni*, Holb.; further, that it is circumpolar in its distribution and is found in North Europe, North Asia, and North America, and appears to range further north than *L. linaria*. Mr. Seebohm and I can therefore lay claim to having added it to the European fauna.

[2] *Vide* 'Ibis,' 1877, p. 128.

TABLE I., showing the fauna at 13 localities (*continued*).

| Species. | Localities and Approximate Positions. | English miles. | Time spent at each locality. | Ust Zyima, 65° 26′ N. | Habarikí, 65° 47′ N. | Yorsa River, 66° 13′ N. | Chuvinskí, 66° 33′ N. | Abramoff, 66° 42′ N. | Viskí, 67° 15′ N. | Gorodok, 67° 31′ N. | Kuya, 67° 45′ N. | Alexieyka, ? | Yooshina, ? | Stanovaya-Lachta, ? | Dvoinik, 68° 28′ N. | Golaievskai, 68° 58′ N. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 26 | April 15 to June 10. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 306 |
| 44. Budytes citreolus, *Pall.* .... | | | | — | — | — | — | — | — | — | — | — | — | — | — | | |
| 45. Motacilla alba, *L.* ..... | | | | — | — | ... | ... | — | ... | — | ... | — | — | — | | | |
| 46. Turdus pilaris [1], *L.* ..... | | | | — | — | — | ... | — | ... | ... | ... | ... | ... | — | | | |
| 47. —— iliacus, *L.* ..... | | | | — | — | ... | ... | — | ... | ... | ... | ... | ... | — | | | |
| 48. Cyanecula suecica (*L.*) ..... | | | | — | — | — | — | — | — | — | — | — | — | — | — | | |
| 49. Ruticilla phœnicura (*L.*) .... | | | | — | — | ... | ... | — | ... | ... | ... | — | — | — | | | |
| 50. Saxicola œnanthe (*L.*) ..... | | | | — | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | — | | |
| 51. Pratincola indica, *Blyth* .... | | | | — | — | — | — | — | — | ... | ... | — | — | — | — | | |
| 52. Phylloscopus trochilus (*L.*) .. | | | | — | — | — | — | — | — | ... | — | — | — | — | — | | |
| 53. —— borealis (*Blas.*) ..... | | | | ... | ... | ... | — | ... | ... | ... | ... | ... | ... | ... | | | |
| 54. —— tristis (*Blyth*) [2] ..... | | | | — | — | ... | ... | ... | ... | ... | — | — | ... | — | | | |
| 55. —— Gaetkei, *Seebohm*, n. sp. [3] | | | | ... | ... | ... | — | ... | ... | ... | ... | — | | | | | |
| 56. Acrocephalus schœnobœnus .. | | | | ... | ... | — | ... | — | — | ... | ... | — | | | | | |
| 57. Parus kamschatkensis, *Bp.* .. | | | | — | — | | | | | | | | | | | | |

TABLE II., showing the fauna in 3 districts. (*continued*).

| | Ust Zyima to Chuvinskí, 65° 26′–66° 30′. | Chuvinskí to Alexieyka, 66° 30′ to 68° ? | Alexieyka to Golaievskai, 68° to 68° 58′. | 'This,' 1876. |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| 44. Budytes citreolus, *Pall.* .... | + | = | ‡ | page 123 |
| 45. Motacilla alba, *L.* ..... | ++ | = | ‡ | 125 |
| 46. Turdus pilaris [1], *L.* ..... | ++ | — | — | ,, |
| 47. —— iliacus, *L.* ..... | ++ | — | — | ,, |
| 48. Cyanecula suecica (*L.*) ..... | ‡‡ | ‡‡ | = | ,, |
| 49. Ruticilla phœnicura (*L.*) .... | = | | | 215 |
| 50. Saxicola œnanthe (*L.*) ..... | = | ... | — | ,, |
| 51. Pratincola indica, *Blyth* .... | = | | | ,, |
| 52. Phylloscopus trochilus (*L.*) .. | ++ | ++ | = | ,, |
| 53. —— borealis (*Blas.*) ..... | ✓ | | | 216 |
| 54. —— tristis (*Blyth*) [2] ..... | = | = | — | 217 |
| 55. —— Gaetkei, *Seebohm*, n. sp. [3] | ✓ | | | 218 |
| 56. Acrocephalus schœnobœnus .. | = | = | | ,, |
| 57. Parus kamschatkensis, *Bp.* .. | — | — | | ,, |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58. —— cinctus, *Bodd.* | | | | | | | | | | | | | | | | | | 219 |
| 59. Ampelis garrulus, *L.* | | | | | | | | | | | | | | | | | | „ |
| 60. Hirundo rustica, *L.* | | | | | | | | | | | | | | | | | | 220 |
| 61. Cotyle riparia, *L.* | | | | | | | | | | | | | | | | | | „ |
| 62. Lagopus albus, *Gm.* | | | | | | | | | | | | | | | | | | „ |
| 63. Tetrao tetrix, *L.* | | | | | | | | | | | | | | | | | | 221 |
| 64. —— urogallus, *L.* | | | | | | | | | | | | | | | | | | „ |
| 65. —— bonasia, *L.* | | | | | | | | | | | | | | | | | | „ |
| 66. Charadrius pluvialis (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 67. Squatarola helvetica, *Briss.* | | | | | | | | | | | | | | | | | | 222 |
| 68. Eudromias morinellus, *Briss.* | | | | | | | | | | | | | | | | | | 289 |
| 69. Ægialites hiaticula (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 70. —— fluviatilis (*Bechst.*) | | | | | | | | | | | | | | | | | | 290 |
| 71. Hæmatopus ostralegus (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 72. Phalaropus hyperboreus (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 73. Totanus canescens, *Gm.* | | | | | | | | | | | | | | | | | | 291 |
| 74. —— glareola (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 75. —— fuscus (*L.*) | | | | | | | | | | | | | | | | | | 292 |
| 76. Actitis hypoleuca[1] (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 77. Terekia cinerea, *Güld.* | | | | | | | | | | | | | | | | | | „ |
| 78. Limosa ægocephala (*L.*) | | | | | | | | | | | | | | | | | | „ |
| 79. Machetes pugnax (*L.*) | | | | | | | | | | | | | | | | | | „ |

[1] In our paper in the 'Ibis' (1876, p. 125) we mention this as "common as far as Stanovaya-Lachta." This is not strictly accurate, as, though seen in some numbers at that place, it was not seen so abundantly at intervening localities to the southward.

[2] We traced this interesting species as far as the island opposite Stanovaya-Lachta, where we heard its easily recognized note on June 28, after leaving the latter place.

[3] *Vide* 'Ibis,' 1877, p. 92.

[4] *Vide* 'Ibis,' 1876, p. 292. We again met with the species a little further to the north, near Abrámoff.

TABLE I., showing the fauna at 13 localities (*continued*).

| Species. | Localities and Approximate Positions. | Ust Zylma, 65° 26′ N. | Habariki, 63° 47′ N. | Yorsa River, 66° 13′ N. | Chuvinski, 66° 33′ N. | Abrámoff, 66° 42′ N. | Viski, 67° 15′ N. | Gorodok, 67° 31′ N. | Kuya, 67° 45′ N. | Alexievka, ? | Yooshina, ? | Stanovaya-Lachta, ? | Dvoinik, 65° 25′ N. | Golaievskai, 63° 58′ N. | Total | TABLE II., showing the fauna in 3 districts (*continued*). Ust Zylma to Chuvinski, 65° 26′–66° 30′. | Chuvinski to Alexievka, 66° 30′ to 65° ? | Alexievka to Golaievskai, 65° to 63° 58′. | 'Ibis,' 1876. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Time spent at each locality. | April 15 to June 10. | April 29–30. June 3, 4, 5. June 10, 11. | June 13–14, 5 P.M. to 2 A.M. | June 14. | June 15. | June 16–17. | June 17–18, 8 P.M. to 4 A.M. | June 18–19, 12 noon to 8 A.M. | June 20 to Aug. 2. | (June 25.) | (June 26–28.) | (July 22–30.) | (July 13–14.) | | | | | |
| | English miles. | → 26 | | 33 | 12 | 20 | 37 | 27 | 25 | 16 | → 26 | | 30 | 54 | 306 | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | 1 | 2 | 3 | page |
| 80. Tringa subarcuata (*Güld.*) .. | | | | | | | | | | | | | — | | | | | ▼ | 293 |
| 81. —— alpina, *L.* ..... | | | | | | | | | | | | | — | | | | | ‡‡ | „ |
| 82. —— minuta, *Leisl.* ..... | | | | | | | | | | | | | — | | | | | †† | 294 |
| 83. —— Temminckii, *Leisl.* .... | | | | | | | | | | | | | — | | | | | = | 308 |
| 84. Calidris arenaria (*L.*) ..... | | | | | | | | | | | | | — | | | | | = | „ |
| 85. Scolopax gallinago (*L.*) .... | | | | | | | | | | | | | | | | | | | 309 |
| 86. —— major (*Gm.*) ..... | | | | | | | | | | | | | | | | | | | 310 |
| 87. Numenius phæopus (*L.*) .. | | | | | | | | | | | | | | | | | | | 311 |
| 88. Grus cinerea, *Bechst.* ..... | | | | | | | | | | | | | | | | | | | „ |
| 89. Cygnus musicus, *Bechst.* .... | | | | | | | | | | | | | | | | | | | 437 |
| 90. —— minor, *Pall.*[1] ..... | | | | | | | | | | | | | | | | | | | 438 |
| 91. Anser segetum, *Gm.* ..... | | | | | | | | | | | | | | | | | | | 441 |
| 92. Anas clypeata, *L.* ..... | | | | | | | | | | | | | | | | | | | 442 |
| 93. —— crecca, *L.* ..... | | | | | | | | | | | | | | | | | | | 443 |
| 94. —— acuta, *L.* ..... | | | | | | | | | | | | | | | | | | | „ |
| 95. —— penelope, *L.* ..... | | | | | | | | | | | | | | | | | | | 444 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97. —— cristata (*L.*) ..... | | | | | | | | | | | | | | | | | 445 |
| 98. Clangula glaucion (*L.*) .... | | | | | | | | | | | | | | | | | " |
| 99. Harelda glacialis (*L.*)..... | | | | | | | | | | | | | | | | | " |
| 100. Œdemia fusca (*L.*) ..... | | | | | | | | | | | | | | | | | 448 |
| 101. —— nigra (*L.*) ..... | | | | | | | | | | | | | | | | | 447 |
| 102. Mergus albellus, *L.* ..... | | | | | | | | | | | | | | | | | 448 |
| 103. —— merganser, *L.* ..... | | | | | | | | | | | | | | | | | 450 |
| 104. —— serrator, *L.* ..... | | | | | | | | | | | | | | | | | " |
| 105. Sterna hirundo, *L.* ..... | | | | | | | | | | | | | | | | | 451 |
| 106. Larus canus, *L.* ..... | | | | | | | | | | | | | | | | | " |
| 107. —— affinis, *Reinh.*..... | | | | | | | | | | | | | | | | | 452 |
| 108. —— marinus, *L.*..... | | | | | | | | | | | | | | | | | " |
| 109. —— glaucus, *L.* ..... | | | | | | | | | | | | | | | | | 453 |
| 110. Stercorarius crepidatus, *Gm.* | | | | | | | | | | | | | | | | | " |
| 111. —— parasiticus, *L.*..... | | | | | | | | | | | | | | | | | 454 |
| 112. Eudytes septentrionalis (*L.*) | | | | | | | | | | | | | | | | | 455 |
| 113. —— arcticus (*L.*) ..... | | | | | | | | | | | | | | | | | " |

[1] We have every reason to believe that this species also passed Ust Zylma, though we had no opportunity of positively identifying it until we obtained the bird at Meekitza (*vide* 'Ibis,' Oct. 1876, p. 440).

Upon an examination of the above Tables it will be seen that the fauna of North-east Russia, as observed by Mr. Seebohm and myself, is represented at each of the thirteen localities as nearly as possible as shown below (p. 290).

In adding up under each class I have, when the horizontal strokes are drawn towards the sides of the columns, ranked the species under "Probably present" in these columns: example—(column 1, species 61,) *Cotyle riparia*, though not seen at Ust Zylma, was seen not very far down the river below it. This distinction may seem unnecessarily precise; but I have thought it better to be exact in these minute points as far as possible, in a paper such as the present, *because*, in many cases, reason may be adduced for absence or a very local distribution. In this case of *Cotyle riparia*, for instance, the absence of sandbanks and suitable haunts may account for it.

| Summary I. | | | | | | Summary II. | | |
|---|---|---|---|---|---|---|---|---|
| Name of locality. | Number of Species actually recorded. | Number of Species probably present though not recorded by us. | Probable total of Fauna of each locality. | Number of Species, balance absent or probably absent, or with insufficient data for record. | Total observed. | Number of Species in district between Ust Zylma and Chuvinski. | Number of Species in district between Chuvinski and Alexievka. | Number of Species in district between Alexievka and Golaievskai. |
| Ust Zylma | 72 | 20 | =92 | and 21 | 113 | 94 | 61 | 55 |
| Habariki | 50 | 33 | =83 | „ 30 | | out of total avifauna of 113 | | |
| Yorsa River | 18 | 50 | =68 | „ 45 | | | | |
| Chuvinski | 14 | 48 | =62 | „ 51 | | | | |
| Abrámoff | 35 | 26 | =61 | „ 52 | | | | |
| Viski | 16 | 40 | =56 | „ 57 | | | | |
| Gorodok | 20 | 33 | =53 | „ 60 | | | | |
| Kuya | 25 | 30 | =55 | „ 58 | | | | |
| Alexievka | 41 | 15 | =56 | „ 57 | | | | |
| Yooshina | 23 | 21 | =44 | „ 69 | | | | |
| Stanovaya-Lachta | 37 | 11 | =48 | „ 65 | | | | |
| Dvoinik | 31 | 1 | =32 | „ 81 | | | | |
| Golaievskai | 5 | 0 | = 5 | „ 108 | | | | |